

Environmentally Challenged

U.S. Economic Competitiveness	Worldwide Demand for Aero Products/Services	Threats to Global Security and/or Quality of Life	Global Trend in Govt. Participation in Society
Weak	Low Growth	High	High



Summary

After years of negligence and abuse the global ecology has turned against the industrialized world. Economically harsh measures are required if the now obviously destructive levels of CO₂ emissions are to be reduced and global catastrophe avoided. Of all the world's major economic powers, the U.S. is among the least prepared — politically and economically— to make the needed sacrifices and is suffering accordingly. All hydrocarbon intensive industries are under merciless pressures: legal, financial, and social. Noncooperating countries, and there are a number of them among the less developed nations of the world, are risking military as well as diplomatic and economic sanctions if they do not similarly curtail their CO₂ emissions. The World Environment Council has become a dominant force in world affairs surpassing in importance and power even the IMF and the WTO. Despite the considerable expansion of governmental and regulatory intervention to reduce the CO₂ threat, public confidence is low and economic expectations are lower.

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. . . While all those requests have been more than flattering, the real reason I accepted this assignment sprung from an experience I had in my children's school last year. I deeply appreciate the confidence placed in me by the Brussels Commission, but the truth is I never would have undertaken this essay were it not for the discovery on my part that children take so much of today's life for granted, that they truly do not know how close we came (and still are!) to the extinction of our species. It is a story worth knowing.

The ethics of our era are unashamedly global; but I will be forgiven, I know, if I begin this story from the perspective of the United States. After all, this essay is first intended for that school audience; and Americans are clearly the ones who need the most help in adjusting.

To the surprise of all economic pundits of the 1990s, the U.S. gradually lost its global competitive position in business, technology, and sheer societal energy as the early years of the millennium passed. While many nations, especially in Europe and in the emerging markets, surged in growth, the U.S. economy stagnated as U.S. corporations wasted considerable investment capital and incurred huge debts in a takeover and merger mania. Wall Street's pressure for short-term profits resulted in significantly reduced funding for research and development across many industry segments. Moreover, increasing numbers of firms moved sourcing and manufacturing operations offshore to reduce costs and more effectively compete in the face of intense global competition. Many firms also were under pressure to maximize cash inflow to cover very heavy debt service obligations.

Poor business decision making was not the only reason for a lethargic U.S. economy. After a brief and unsuccessful attempt at fiscal reform, the U.S. government (under pressure from an aging population) returned to high social spending mixed with regulatory invention and increasing tax burdens. Of course, the U.S. government was unable to reduce the debt under these circumstances. In fact, the U.S. debt increased as various administrations were unable to control escalating Social Security costs resulting from intense political heat applied by a powerful and extremely well organized aging population. Healthcare reform efforts suffered similar resistance. Schemes such as federal requirements for U.S. corporations to assume a greater share of healthcare costs further encouraged corporate flight from the country.

Increased taxes for social programs resulted in low personal savings rates and less capital for infrastructure improvements and research. Efforts to reform education in the U.S. became embroiled in ideological disputes. As a consequence of offshore sourcing and inadequate training of the work force, unemployment among lower-skilled workers grew rapidly. Most new job generation was in the low end of the service sector.

The only real improvement in the U.S. economy was in trade policy — it came as a Pyrrhic victory, however. The U.S. made some early progress in reducing its trade deficit but it had done so using strong-armed trade threats and nontariff instruments, particularly in dealings with Japan and China. It worked for a few short years (into the early 2000s) while the U.S. economy was still

the most attractive consumer market. However, as the consumption capacity of the U.S. economy waned (causing import demand to drop), the Japanese and Chinese retaliated with trade restrictions on U.S. products. Antagonisms ran high, but the U.S. was powerless to do much more than live with reverse trade discrimination.

There was limited public support for defense spending since there were few perceived threats other than economic disputes with Japan and China and some intractable terrorist issues, particularly Islamic fundamentalism. Several U.S. failures in supporting nation building experiments in Africa and Latin America fed a growing national mood of isolationism. The resulting reduced defense budgets led to a decline in DOD procurements. Limited orders caused a major decline in the defense industrial base; suppliers to the prime contractors were particularly injured.

Other major economic powers did not share the U.S.'s problems. During this same period, Europe, Japan, China, and a number of countries on the Asian littoral experienced significant growth as a result of the improving efficiency of global capital markets targeted at investments in new and emerging global markets. As East Europe recovered from its depression in the 1980s and 1990s, it provided a major market for exports from the European Union (EU). Similarly, the growth of the middle class in such countries as India and China not only provided large internal markets but also provided major opportunities for Japan and other Pacific Rim exporters. In China alone, annual export earnings and GDP growth averaged 10 and 12 percent, respectively. Meanwhile, healthy economic growth permitted EU nations and Japan to make substantial progress in retiring the large social debt accumulated in the 1980s and 1990s. In Japan, for example, large corporate profits from increased exports permitted greater privatization of social services. In the EU, investment capital was available for infrastructure improvement. Japan, on the other hand, was able to divert money away from infrastructure projects having made heavy investment in the 1980s and 1990s. Japanese companies were therefore in a stronger position to take on long-term research and development projects.

A perceived reluctance of the United States to perform its traditional role in world affairs resulted in expanded defense spending in Europe and Asia. Although many Pacific Rim states had good economic relations with China, they continued to fear Chinese expansionism. China avoided a succession crisis and continued along a path of heavy defense spending (both in absolute and relative terms). Chinese military equipment modernization was unmatched by any country during this period. Japan, in particular, found the U.S. withdrawal from Asia disconcerting as it increased the vulnerability of trade routes and oil supplies, and generally disturbed the balance of power in the region. Japan amended its constitution to permit up to 5 percent of its GNP for defense spending and invested heavily in advanced naval and long-range air surveillance and interdiction technologies and capabilities.

Other Asian nations similarly decided that moderate to high defense budgets, particularly for acquisition, were prudent given Chinese capabilities. The EU, similarly, was disturbed by the seeming U.S. withdrawal from its traditional role in Europe. The potential for instability worldwide, possible threats to oil routes and oil reserves, and a requirement for a strong regional economic union motivated EU members to maintain a strong defense industrial base and dual-

technology infrastructure. Europe increased its research and development budget. This effort to maintain a strong defense and advanced dual-technology base was partially funded through foreign sales, particularly to the Middle East and to emerging industrial powers in Southeast Asia. Many of these sales were through licensed production and technology transfer instruments.

Accelerated industrialization in China, India, and Southeast Asia was among the most significant developments of the late 1990s and early 2000s. Manufacturing grew at unprecedented levels; many of the Asian Tigers' manufacturing sectors grew at levels above 10 percent a year. It required extensive infrastructure construction. But the new availability of highways, for example, resulted in major demand for automobiles, in turn increasing congestion and pollution. Similarly, economic growth among these nations had the effect of creating a large middle class. The middle class became the major impetus for a large demand for all forms of transportation, including business and recreational air travel.

Russia did not experience the rapid growth of most of the industrialized or industrializing nations in Europe and Asia. Its government debt continued to grow, but it did make steady progress in resolving its massive economic problems and ameliorating social conflicts. Major European and Japanese investment in the manufacturing and resource extracting sectors was the primary reason for the steady improvement in the economy.

Growing industrialization worldwide generated enormous demand for Middle East oil. Global supplies remained adequate, however, and the major producers were unable to reach agreements that would have permitted them to significantly increase the price of oil. The main causes of this were the militant policies of Iran as well as major arms procurement by that country. All other nations in the region were compelled to invest heavily in deterrent systems. Thus the Middle East arms market was a major customer for the European defense industries. Similarly, China found a major market for its defense equipment in exports to Iran. Iran itself remained a fundamentalist Islamic theocracy. This kind of militancy did not spread to other Middle East states, however.

While global tensions were high, global business was expanding at a healthy clip, as evidenced by new factories, new trade and commercial relationships, and increased cross-border capital flows. This free-trade environment drove demand for truly efficient and global transportation systems. Predictably, living standards in the developing world improved as household income grew and physical and social infrastructures were developed. Diet and public health across the globe were moving toward Western standards and consumers everywhere (outside the U.S.) were feeling more confident about the future. On the other hand, congestion in cities was becoming a serious problem, water and air pollution were on the rise, and urbanization was compounding the development problems in large metropolitan areas.

This rapid, worldwide industrialization resulted in unprecedented use of petroleum products. By 2007, many scientists across the globe were raising environmental concerns and predicting dire consequences from the emergent threat of global warming. An evidence debate occupied a surprisingly large place in the daily news media — especially in Europe, but on the Internet, as well. From 2008 to 2010, a very strong consensus emerged in the scientific community (and in many influential parts of the global political community) that the world was on the brink of an

environmental crisis because of high levels of CO₂ emissions. New measurement techniques (available only in recent years) demonstrated emphatically that global warming was occurring. It was further revealed that a small increase in the arctic temperature was leading to permafrost melting in the tundra. Scientists had known for over a decade that the melting tundra would release CO₂ and methane at levels so high as to seriously compound problems that had been created from industrialization.

The political reaction to the global environmental crisis in Europe was more decisive than in other parts of the world. Green parties became very powerful in the EU and their concerns quickly dominated political agendas. The Europeans had had CO₂ limits and CO₂ emissions credits systems for utilities since the 1990s. These were expanded dramatically. The Union also established stringent CO₂ emissions requirements on all emitting industries and vehicles. U.S. (and many emerging market) products that could not meet these standards were denied import licenses. Whereas, European products that could meet the new standards were marketed with growing success everywhere (even at somewhat higher prices).

Initially, U.S. responses were weak and vacillating owing primarily to the political reality that job protection had become the bottom line of economic and social policy. However, mounting evidence of an impending crisis over about two years created a mood swing in U.S. public attitudes (especially among the baby busters generation that had always been “green”) that made a positive government response a necessity. U.S. industry driven by market concerns and export opportunities (the European CO₂ standard was fast becoming global) put even greater pressure on the government for decisive action in setting targets for emissions levels, supporting research, and ameliorating the social and economic consequences of attempting to meet the targets.

The most developed industrialized nations led several diplomatic moves for concerted global action. However, newly industrializing nations, led by China, were quite skeptical concerning the “Western” definition of the problem and were very reluctant to accept “Western” solutions. Some nations and many radical groups insisted that the CO₂ scare was a conspiracy of the industrialized nations to prevent the emergence of competitors.

Not satisfied with the global diplomatic malaise, the Europeans established very aggressive CO₂ emissions targets by 2012. The U.S. and Japan followed this lead and also established strict time tables for lowering CO₂ emissions. These targets and the regulations necessary to meet them became the progenitor for the development of new products and services across the globe. The rapid decrease demanded in CO₂ emissions also had the predictable effect of seriously reducing economic growth. The world slid into a deep recession for four to seven years (depending on the region).

By 2015 a complex mix of international cooperative and independent national actions was under way, within a constrained economic environment. These actions included: (1) national efforts in CO₂ control, including major regulations, use taxes on fuels, significant government sponsored research and development and incentives and penalties; (2) private research and development for solutions that gain market share in a CO₂ “limited” world; (3) international research and development efforts of corporations and nations; (4) international regulations agreements; (5)

national and international emissions targets; (6) the emergence of a World Environment Council that has been delegated authority to impose sanctions on offenders of emissions targets and regulations; (7) an international agreement with a phased set of targets to reduce world CO₂ emissions significantly by 2040.

The war on CO₂ emissions resulted in major economic dislocations, significant unemployment, and major increases in national debts as governments and corporations attempted to implement national and international strategies. As more restrictions were placed on the use of hydrocarbon fuels, the global recession deepened. Internal combustion automobiles became seldom used; factories curtailed operations unless they reduced CO₂ emissions; far fewer scheduled airliners flew and when they did it had to be with the most updated propulsion systems.

As more and more countries “came on board” with CO₂ limits (the physical evidence — including disruptive climate change — was simply becoming overwhelming), a fair adjudication of CO₂ emissions limits evolved from the European experience. Across the globe, CO₂ emissions “credits” were allocated to countries through multilateral negotiation based on a complex set of metrics including level of industrial development, size and density of population, number of forests, etc. Countries could buy and sell their credits — their “rights to pollute.” As had happened in an earlier time in the 1980s and 1990s in the U.S. and Europe, a futures market in CO₂ credits emerged and global market forces pushed the sale, barter, and trade in credits as differing countries made choices about the approach they would take to meet global standards. Within countries the re-allocation of emissions credits was up to national governments. Some, as in Europe and many parts of Asia, chose strict highly regulated rationing programs. In the U.S. regulated set-asides for “nationally critical activities” were mixed with market mechanisms for private sector utilization of “emission rights.”

The world has entered into a period of considerable social crisis with inevitable political and economic instability. There is continuing tension over hydrocarbon limits and credits and over national regulations and targets which often seem to favor local industries. Many nations have increased their defense budgets and strengthened their military forces to back up economic sanctions for states not cooperating with CO₂ reduction protocols and for the simple reason that the future has become highly uncertain. The dislocations associated with hydrocarbon limits have created civil unrest in many economies. Across the globe, these are very hard and acutely uncertain times.

Stagnant and recession economics has become the expected norm, globally. While oil supplies have remained stable and wholesale costs have not increased drastically (under complex multilateral treaties), end-user costs of products derived from oil have increased dramatically. Along with emissions credits, rationing of oil has become one other means of controlling CO₂ emissions. But this rationing has increased production costs as manufacturers invest heavily in alternative processes. Almost all nations are experiencing high unemployment, high inflation, high cost of capital, and major loss of net worth as stock markets stagnate and decline. Entire industry segments are now at risk, if they still exist. Corporations remain marginally competitive, if their markets are contiguous with their manufacturing location, but are in serious trouble if they must rely on long-range transportation.

Of all nations, the U.S. is among the worst off. Highly dependent on CO₂ emitting industries, our resources are stretched very thin as we attack the problems. The poor business judgments of earlier times, combined with governments that recklessly pursued social spending and higher public debt, left the U.S. with few options in these very hard times of restricted petroleum use, high unemployment, and interminable recession. Government debt is high and private corporations are stretched to the limit; yet vast resources are necessary to find both immediate and long-term relief of CO₂-related problems. Much of the U.S. population has shaken off its earlier lethargy; Americans generally rise to any challenge. Yet they find the most vigorous actions are centered in Europe, and many join those efforts through the Internet to make the most of their contributions to the global crisis.